Remarks

Applicants hereby respond to the Office Action dated May 5, 2004. In that Office Action, claims 4-5 were rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention. Additionally, the Office rejected claims 1-3, 6 and 18-20 under 35 U.S.C. § 102(b) as being anticipated by Evans et al. Finally, the Office rejected claims 4-5 and 7 under 35 U.S.C. § 103 over Evans.

Applicants hereby affirm their election to prosecute the invention of Group I, claims 1-16 and 18-20 with traverse.

In response to the Office's § 112 rejection, Applicants have amended claims 4-5.

Applicants respectfully disagree with the Office's rejections of the claims over Evans, as set out more fully below. In particular, in response to the Office's rejections of the claims in view of Evans, Applicants point out the following differences between the claims and Evans which Applicants assert overcome the Office's § 102 and § 103 rejections.

First, all of the claims of the application call for a catalyst system that includes two distinct catalysts. Per the claims, the two distinct catalysts have different compositions, and each catalyst is designed to perform different functions. As an example, the Perovskite composition of the first catalyst is designed to optimize the storage of NOx emissions under lean air/fuel ratios. The second catalyst comprising a PM-Rh catalyst mixture is designed to reduce hydrocarbons, NOx and CO emissions under stoichiometric air/fuel ratios. As set forth in the specification, the general Perovskite structure is not designed to maximize NOx storing and releasing functions. However, the newly developed Perovskite structure, set forth in the claims, is specifically designed to maximize NOx storage and release by providing the requisite close proximity between the precious metal and the NOx trapping metal. Evans neither teaches nor suggest the use of two catalysts to perform these two distinct functions.

Second, the claimed catalyst system is directed for use in reducing emissions under lean and stoichiometric air/fuel ratios. The Evans catalyst is not directed to a catalyst system that is capable of handling both lean and stoichiometric air/fuel ratios, and in particular capable of reducing emission of air fuel ratios greater than 28. See, Figure 1 of the patent application.

Third, the Evans Perovskite composition uses barium as a stabilizer/ promoter. In the present claimed invention, barium is used as an active metal. Accordingly, barium can be used in a much greater percentage than what is used in Evans. As an example, in the claimed invention, barium oxide can constitute up to 20%(wt) of the catalyst. In Evans, barium as the refractory metal oxide can constitute no more than 5%(wt).

Fourth, Evans never teaches that part of the lanthanum at the A site of the Perovskite structure can be substituted with magnesium and potassium, to provide balanced trapping function at both high and low temperatures.

These differences result in a catalyst system with a different structure, different catalyst composition, and different functional abilities. For these reasons, Applicants respectfully assert that the claimed invention is neither anticipated nor rendered obvious by Evans. Applicants thus respectfully request allowance of the claims. Should the Examiner have any questions, please feel free to contact the undersigned.

Respectfully submitted,
Haren S. Gandhi et al.

By _____
Sangeeta G. Shah
Reg. No. 38,614
Attorney/Agent for Applicant

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BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400; Fax: 248-358-3351